

frame encoded data generating means generates the frame encoded data by using quasi-frame encoded data composed of a portion of the image encoded data and a portion of the sound encoded data.

- 5 8. An encoding apparatus for encoding frame data containing image data and sound data, comprising:

separating means for separating the image data and the sound data contained in the frame data;

- 10 image data encoding means for hierarchizing the image data into a plurality of types of image data and encoding the plurality of types of image data, thereby generating image encoded data corresponding to a plurality of levels;

- 15 sound data encoding means for hierarchizing the sound data into a plurality of types of sound data and encoding the plurality of types of sound data, thereby generating sound encoded data corresponding to a plurality of levels; and

- 20 frame encoded data generating means for generating frame encoded data by using the image encoded data and the sound encoded data,

- 25 wherein said frame encoded data generating means generates the frame encoded data by forming a plurality of groups of different levels by grouping the image encoded data and sound encoded data belonging to the same level determined on the basis of a predetermined reference, and arranging the plurality of groups in

descending order of significance level.

9. The apparatus according to claim 8, wherein the plurality of types of image data hierarchized by said image data encoding means correspond to a plurality of
5 frequency components obtained by discrete wavelet transform of the image data.

10. The apparatus according to claim 8, wherein the plurality of types of sound data hierarchized by said sound data encoding means correspond to speech data
10 which corresponds to a human voice and non-speech data other than the speech data.

11. The apparatus according to claim 10, wherein said frame encoded data generating means groups encoded data of the speech data as sound encoded data of significant
15 level together with first image encoded data, and groups encoded data of the non-speech data as sound encoded data of insignificant level together with second image encoded data.

12. The apparatus according to claim 11, wherein
20 the plurality of types of image data hierarchized by said image data encoding means contain a first frequency component obtained by discrete wavelet transform of the image data and a second frequency component higher than the first frequency component,
25 and

the first and second image encoded data correspond to the first and second frequency components,

separated image data in sequence from a lower to a higher frequency component thereof, thereby generating image encoded data;

the sound data encoding step of encoding the
5 separated sound data in sequence from a lower to a higher frequency component thereof, thereby generating sound encoded data; and

the frame encoded data generating step of
generating header information by using the image
10 encoded data and the sound encoded data, and generating frame encoded data by using the header information, the image encoded data, and the sound encoded data.

20. An encoding method of encoding frame data containing image data and sound data, comprising:

15 the separating step of separating the image data and the sound data contained in the frame data;

the image data encoding step of hierarchizing the image data into a plurality of types of image data and encoding the plurality of types of image data, thereby
20 generating image encoded data corresponding to a plurality of levels;

the sound data encoding step of hierarchizing the sound data into a plurality of types of sound data and encoding the plurality of types of sound data, thereby
25 generating sound encoded data corresponding to a plurality of levels; and

the frame encoded data generating step of

generating frame encoded data by using the image
encoded data and the sound encoded data,

wherein the frame encoded data generating step generates the frame encoded data by forming a plurality of groups of different levels by grouping the image encoded data and sound encoded data belonging to the same level determined on the basis of a predetermined reference, and arranging the plurality of groups in descending order of significance level.

10 21. A program which, when executed by a computer,
allows the computer to function as an encoding
apparatus for encoding frame data containing image data
and sound data, comprising:

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        a code of the separating step of separating the
15  image data and the sound data contained in the frame
    data;

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a code of the image data encoding step of
encoding the separated image data in sequence from a
lower to a higher frequency component thereof, thereby
20 generating image encoded data;

a code of the sound data encoding step of
encoding the separated sound data in sequence from a
lower to a higher frequency component thereof, thereby
generating sound encoded data; and

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25         a code of the frame encoded data generating step
of generating header information by using the image
encoded data and the sound encoded data, and generating

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reference, and arranging the plurality of groups in descending order of significance level.

23. A recording medium recording the program according to claim 21.

- 5 24. A recording medium recording the program according to claim 22.

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